

# LOW NOISE MIXER CIRCUIT WITH IMPROVED GAIN

## ABSTRACT OF THE DISCLOSURE

A mixer circuit of the present invention includes a gain stage configured to receive a first signal and a modulated bias current, and in accordance therewith, produce an output signal, the gain stage generating a first current and receiving the modulated bias current from a bias circuit on a common node. The bias circuit includes an input configured to receive a second signal, and in accordance therewith, generate the modulated bias current. The mixer circuit also includes a current shunt circuit for generating a second current. The first current, the second current, and the modulated bias current are coupled to the common node. In one embodiment, the first signal is approximately a square wave, and the frequency of the first signal is one-third the frequency of the second signal.

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